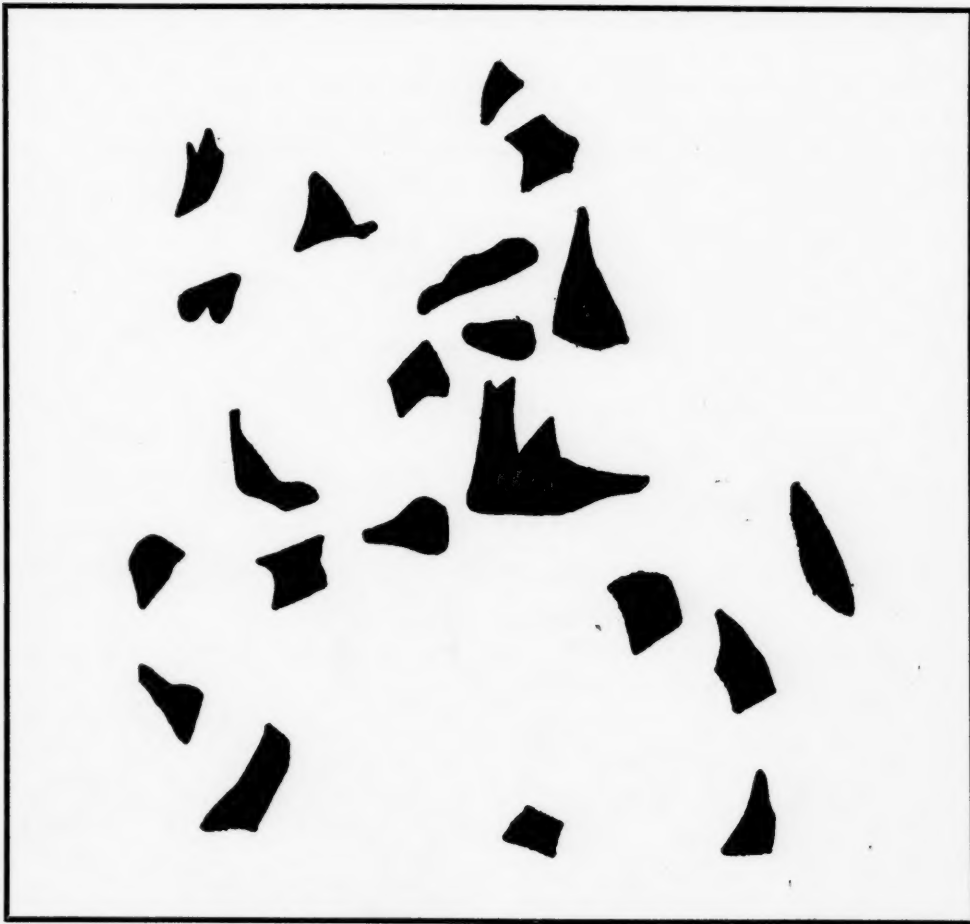


MAIN CURRENTS

IN MODERN THOUGHT



SEPTEMBER, 1955

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MAIN CURRENTS IN MODERN THOUGHT

A co-operative journal to promote the free association of those working toward the integration of all knowledge through the study of the whole of things, Nature, Man, and Society, assuming the universe to be one, dependable, intelligible, harmonious.

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Fund. Graduate

REASON AS THE BASIS FOR RELIGION*

F. L. Kunz

Foundation for Integrated Education

Deductive-Exact Science, Conjoined

With Religion, Can Help Create a New
World Culture

I

ALL of us are aware, in varying degrees of clarity, of the turbulence and the tension of our times, and of the magnitude of the scientific transformation which has had such far-reaching effects upon our society. Although we may personally feel struck with awe and even with terror and helplessness before the dimensions of this transformation, my thesis is that there is, in this crisis, specific opportunity for individual action.

I propose that we shall consider what an individual is, and how he is related to this universe, that he can act effectively, as an individual in a drama so vast and compelling. What is the nature of man that, unlike the other creatures whom he resembles in so many ways, he can act with effect as a single person in ethical and moral issues, even when the scale of events seems to dwarf him to little or nothing?

II

AS to the scale of events, in my opinion we are facing nothing less than a liquidation of vast historical forces. We are today still observing the settlement of those restless populations which started to flow into the New World some five hundred years ago. We are still witnessing the destruction of a closed little European society, and the sensitive internal balance it achieved under the guidance of the Christian churches. We are also observing the last stages of the economic expansion which followed upon the discovery of the New World, with its vast wealth of lands and natural resources. We now see the Indo-European peoples coming to a kind of equilibrium. Having spread all over the earth and possessed themselves of large parts of it, Europeans

met, and for a while mastered, other branches of the Indo-European stock, as well as pre-Aryan peoples. But this surge is slowing down. Now we see clear reactions to the Europeans by the Indian branch of the Indo-European cultures, delivered at last on terms of political equality. The Europeans, with all their immense industry and inventive technological capacity, are, as it were, coming to a pause in their advance toward world dominance.

These great historical changes have been accelerated and intensified in our own lifetime by the scientific transformation whose dimensions must likewise be assessed if we hope to understand its social implications.

Throughout his history, man has been deriving such security and leisure as has been available from resources which, in the end, trace back to energy from the surface of the sun. For that is the real origin of wood and peat, coal and oil and natural gas. The leisure which power has given us has been considerably increased in recent years, and security has increased as well. But despite these advantages, we have not arrived at the point where a world culture can be established, because the energy available has not been sufficient to give leisure, security, and the opportunity for a cultural life to *all* men. What we have had has been enough for rest, recreation and entertainment for many after a wearying day of work. But these alone are not creative of a culture. A culture, in the true sense, is a society which is guided by an understanding of the real needs and nature of man, of the purpose that nature has for him, and of the kind of social order in which he can fulfill himself. The leisure and security required for the establishment of such a society are coming now, with the release for our use of new sources of energy which are almost limitless in amount. To the energy derived from the surface of the sun we are adding the far greater resource derived from the interior of the atom,

*Colloquium Address at the May 1955 meeting of the Unitarian Association, in the First Church, Boston, Mass.

by processes which are believed to be similar to those occurring within the sun.

Let us revert for a moment to consideration of the historical picture. Columbus discovered a new world, rich in gold and land. These new forces destroyed the old society, and with it Europe's illusion of peace. We may say that Einstein and other physicists have discovered a different new world—the world of space-time — from which we are deriving a wealth that makes the treasure which the Voyagers found seem insignificant. It has been said that if all the energy that is now available were reduced to thermal units, the presently known oil and natural gas resources would amount to two units, and coal and its congenies would amount to seven. But from presently known uranium deposits, without consideration of those which may be discovered in the future, or of other elements and new methods, the potential in similar thermal units is 200. This promises a leisure and security in the future which will allow the possibility and the time for travel, and art, and speculation for everyone, if our political management of all this is wise and generous.

My thesis is that if this new leisure is accompanied by the search for better knowledge of the nature of man and his purpose on this globe, then, and only then, shall we be able to fulfill and not destroy ourselves. These considerations suggest the true dimensions—historical, economic and philosophical—of the crisis through which we are passing.

III

I SHOULD like to say at this point that I am convinced our resources in religion are completely adequate for the problems that confront society today. Arnold Toynbee has made clear to multitudes of people what scholars have long known, namely, that when the religious experience of the whole human race is pooled, it provides guidance, in its central core of common principles, quite sufficient to enable us to unite the societies of the world, and to reassert the vitality of the ethical message of the greater and lesser teachers of the past.

This does not mean that there is no work to be done in the field of comparative religion. What is common to Hinduism and Buddhism, to Judaism and Christianity, to Jainism and Islam, and to those religions no longer represented by active churches and congregations, must be clearly identified, so that their diversities will be seen to be ornaments on something universal and real at the heart.

As to this disclosure of common purpose, I feel that our part in a world society is harder to understand and explain than is the ethical wisdom and religious love that has come to us from older societies, especially those of the Orient. For they have revealed their truths. Because of their antiquity, what they have provided has been often and well stated. We of the West are younger, and what our contribution is to be remains yet to be seen. Indeed, since it is a

futurity, we do not understand it ourselves. For this reason we should not expect the people of the Orient to understand our "way of life," which embodies the beginnings of our deep, but as yet undeclared, cultural purposes. Furthermore, we, being younger, have the greater vitality. If we have also the courage and the will to learn from these older peoples what they have to give us, both of us will benefit.

Amongst these peoples, and foremost of all, is India. If we were to direct our attention to India alone, we would be repaid richly from her wealth of philosophical and religious insight. Let us recall that some of the basic intellectual skills, which we in Europe have used for the creation of our industrial and technological society, were actually invented in India as part of the religious and metaphysical enterprise of the past. We forget India's contribution too often, because she was a subject and colonial nation during the period of Western technological expansion. Yet it was the Indians who invented higher mathematics, arithmetic and quadratic equations, and applied them to astronomy and chronology. Moreover, they have always employed their intellectual skills for metaphysical and religious purposes, a use of equal importance to them in the study of nature. We in the West are now using these skills in ways that promise to be revolutionary. But in order to gain the highest benefit from them, we need the balance and integration which the older cultures have achieved. One of their greatest achievements, without doubt, lies at the religious level.

But I must say, bluntly, that religion is not enough. For religion is primarily experience, and hence, however rich it may be as an inheritance, it requires constant renewing. In my view, religion is the feeling, more or less strong, more or less sustained, that we are part of something larger than ourselves, which may catch us up from time to time and dissolve us in something more unifying than our egotistic isolation leads us to believe possible. The religious way has been through feeling, rather than thought—personal and private experience, and not general, communicable public knowledge that ensures experience to many.

Now the number of religious personages throughout history whose lives are recorded for us more or less fully is relatively small, even if we include the lesser names with the very greatest—even if, to Jesus and St. Paul, to Siddhartha Gautama Buddha and Shankaracharya, we add, for example, Plotinus and Swedenborg and Walt Whitman, William Blake, Emerson and Blaise Pascal, and all those others who have experienced something of that larger being which is really our Source. They are all too few and, what is more, in the lives of some, that "Presence which disturbs us with the joy of elevated thought" was by no means continuous. Plotinus complained that in his case the exaltation came but twice, and then without his direction, in contrast with his master, Ammonius Saccas, who could enter this state at any time.

Those of us who study the book of nature and the secrets in the heart of man recognize that there is this constant background available through the highest feelings and intuitions. But man is more than feeling. He is also a thinking creature, compelled to know. This decisive characteristic of the human species is exemplified in the name by which it is denoted: man. The word in English is cognate with *manes* and *monas*, and connected with Sanskrit *manas* and *manu*, words which are all linked with mind, with the ability to know. This suggests that we are called upon by our very nature not only to employ altruistic *feeling* in order to do the right, but also to use conceptual, cosmological *thought* in order to know the right. It appears, however, that the unity in man is buried so deeply that the individual can practice a fission between his feelings and his thoughts for a long time before he destroys the underlying unity, and ill-health or social breakdown proclaim to him the violation to his essential wholeness.

Today the rapid march of historical events requires special efforts of us: a profound kind of knowledge that will match the riches of religious feeling. Out of that juncture can be born in peace a future world society. When Emerson said, in his essay on the *Oversoul*, "Our being is descending into us," he could justly add, "We know not whence." For in the days when he wrote, mechanism was triumphant. But today it is neither necessary nor wise to put aside the duty of bringing the mind to a position equal, in respect to spiritual matters, to the place occupied by right feeling. These are the considerations which compel us to confront our problem: the place of reason in religion.

IV

THE nature of the problem, from the psychological point of view, might be identified, and dismissed, by a comparison between knowing in man and in other creatures. In the case of migrating birds, certain species can fly for thousands of miles with an unerring, and not well understood, sense of avigation. They are able to find their destination because their relationship to nature, as regards knowledge and feeling is so *homogeneous* and so immediate (we must suppose) that they do not need the formal knowledge of location so necessary to us. This will be not less but more true when the physiological basis of their flight comes to be known, as it is now known in bees.

In us this unity in the relationship of feeling, thought and action has been impaired. With the rise in man of cognition and conceptuality, this natural, instinctive relationship, which is active in animals, has been driven underground. It is almost as though man has been exiled from that Garden of Eden, and is compelled to find his way back by the exercise of those deeper forms of knowledge which are appropriate to him as a free individual.

It appears that these simple relationships to nature are not entirely extirpated in us. Through the work

in parapsychology of contemporaries like J. B. Rhine and Gardner Murphy, Prof. Soal, Dr. Salter, Prof. Ducasse, and others—as well as earlier workers like Frederic William Myers and Andrew Lang—we have come to see that although man's direct relation to nature may have been suppressed by the invasion of this higher order of knowing, yet in certain individuals and certain circumstances, that rapport with nature can be restored through extra-normal perception. No doubt in the science of the future much more will be known about all this. But I want to emphasize that this is still perception. This is still some kind of sensory knowledge of nature. It does not reach the Ground that religion speaks of. There is something much more profound for man to discover, and in my opinion, he has been deliberately cut off from the participation in nature that animals enjoy so that he may be forced to use his own intelligence and cognitive powers, to *that end*.

From the work of men like Margenau, Northrop, Sorokin, and others, we are aware that the culture made possible by the freeing of nuclear energy not only must, but can, rest itself upon a knowledge that is adequate to the task of formulating a one-world climate for values. Rome was founded upon Stoicism. Upon the Pythagorean point of view the Periclean Greeks rested their society. Today, we must add to our religious inheritance a new study of this vast and impersonal universe, which has been laid open to us by the researches of our physicists and astronomers. We are compelled to this because man has ceased to be a passive historical phenomenon, and has instead become a geological force, through his power to mold his environment. We are forced by circumstances to develop an intellectual attack, a skill, which will be as effective in raising the mind to contemplation as is religion in exalting the emotions to altruism.

V

WE thus arrive at a question, *the question*: How is this to be done?

The answer is to be found with the aid of a new kind of knowledge which has acquired great force in recent years, particularly with the advent of the abstract concepts of relativity and quantum theory. This principle is exact science, or, to put it more correctly, deductive-exact science. It is distinctive, and I shall try to explain why I believe it is of such importance, from the religious point of view as well as the secular.

Deductive-exact science, unlike inductive inference, which is generalization from facts and therefore open to error, starts with ideals, with absolutes, or even with infinities, verifying them later in the field of facts. In other words, it starts at the point where the religious person desires we shall end. If we take a simple example from the laws of motion, we note that one of Newton's assumptions is that when a body is in motion, if it is not acted upon by any force, it will continue in a straight line forever. What is here offered us? Infinities and abso-

lutes. Starting with assumptions of this kind, we can confront nature and find her exercising the orders which we have derived initially from a metaphysical world.

Unfortunately, the resources of this method are only being used at the forefront of science today, and their philosophical implications are not sufficiently recognized. Logical positivism and a distrust of metaphysics still remain impediments. Despite this, the method holds great promise of supplying, as a basis for religion, reason derived from the metaphysical background of empirically tested science.

If we are to exploit fully this opening in science, we have a tremendous task to perform. For the deductive-exact method, which has had such successes in chemistry and physics, the sciences of the apparently insentient, has been arrested in biology, the science of life. Beyond genetics, all that we ought to know in these terms of the world of life in which man is immersed, and of sociology and psychology, is only available in scattered items. It is true that the function of knowing through wholes, through meaningful structure, reappears in gestalt psychology, but the immense area between physics and psychology is as yet largely unstructured.

It is in this biological field that the deductive-exact method would be most rewarding. For the laws of nature are written on the very face of the life orders, not buried, as in physics, in the heart of the atom. Every flower in the field, every creature in the forest, declares the glories, the subtleties that are hidden in the primal orders of matter and energy. Man needs imperatively to understand the life process because he is himself a prisoner to life, each individual lodged in the cell of his organic and psychic nature. But besides research into the deductive-exact background of biology and psychology, something much more remarkable is required.

VI

MAN is immersed in nature, and as a perceiving being he may be surrounded by psychological as well as electro-magnetic fields. But beyond all this, as a cognitive being he seems to be related to something quite different from nature, of which he is otherwise a part. Saints, seers and sages have all testified that they have experienced a world so strange as to be rapt away from nature, or rather to that which underlies our world of matter and energy. We ordinary mortals, isolated as we are in our individual biological-psychological processes, are divided from the Reality which is our true origin, but in rare moments it may catch us up. When our mathematicians postulate absolutes and infinities, are they not within the cognitive field with which the religious person is concerned? Are they not somehow in direct rapport with the laws of nature in their noumenal form?

This is a question which we cannot answer. But

it is a singular fact that all the great religions of the world have taught that in addition to the divinity which has a vesture, the manifold beauties of nature, there is that same divinity which transcends any universe and persists when there is no phenomenal world to express it. God is both transcendent and immanent. If there is any living creature with roots in the transcendent, it must surely be man, for he alone in the physical world has the cognitive power to stand back from that which he is as animal, and judge himself. It is only man who can be aware of himself, and aware that he is aware, of what he calls "my self." This power of objectification, of withdrawal, of retreat, which is familiar in religion, is also employed by every man of genius, and not least by those scientists who have devised systems of beauty and precision which fit perfectly into the orders of nature.

The task of getting hold of the cognitive field will not be easy, for this world of transcendence is deeply buried. But if our studies of comparative religion, in which the identity of principles is revealed, can be paralleled by studies of the laws of nature, agreeable to deductive-exact science, there is great hope before us.

Such a program, I should like to conclude, is indispensable for the United States. Within our secular school system, a child, thus taught, would gain conviction that he is resident in a universe so subtly organized that it can afford to give him freedom to learn, so powerfully ordered that although man may violate its laws, justice will in the end be done him. It seems to me that the restitution of ethics on the basis of natural law is the inescapable requirement of our educational system as a whole.

It also seems to me indispensable for the maintenance of our democracy. The Founders of our country understood that they were resting constitutional provisions upon natural law. It is only we, in recent generations, who have tended to forget that freedom is a function of order, and not a juridic gift from some legal assembly. We are losing our civil courage, in the face of those who would destroy liberty, because we are not saturated through and through with integral reliance upon the sublime order that has made us, and sustains us.

We can now expect a period in which leisure and security, and the search for man's essential needs and nature, will all be possible, due to the wealth of energy we are unlocking from the very depths of the cosmos. When first we tapped this resource, at Hiroshima, it looked as though we had opened the pit before us, but it may be that we shall find instead, on the other side of our present confusion, a kind of heaven. Not far ahead is a world in which, with wealth and peace and security, we can engage in the most serious and important study of all, the pursuit of our own essential nature. Just as comparative religion will help unite the world, so will study of the cosmic orders serve to draw men closer in their common humanity, for science—at that level—is no less coin of a cultural world.

MAN'S CHANGING VIEW OF HIMSELF*

Ralph F. Hefferline

Columbia University

Our Growth Away From Dualism

Towards a Unitary, Naturalistic View of
Man

VIEWS of man—what he is and how he should behave — have been offered by religion, philosophy and science. Some such view, even if not clearly formulated in words, is necessary as a basis of order in any human society. It decides what is and what is not to be regarded as human nature. The view that prevails in one's own community, no matter how arbitrary it may be, comes, sooner or later, to seem inevitable, obvious, a matter of common sense. Daily living conforms more and more to the prescribed pattern, and this is taken as evidence, not of human plasticity and receptiveness to training, but of the essential rightness of the view. So far in history, though, no single way of looking at man and the world has ever won acceptance by all mankind, and today we are felt by many to be further from such a consensus than at any time before.

It requires a degree of brashness, in the face of this, to state a conviction which is likely to sound extreme. It is, in effect, that the critical disagreements which now rack mankind will be settled—and that the method will consist of action taken in accordance with a transformed view of man. This transformation, as I shall try to indicate, is already in progress. Many now recognize and affirm it in limited aspects, but no one thus far can comprehend it fully. Yet in its eventual sweep I believe that this shift in our way of looking at man and his situation—and the simultaneous changes in our ways of thinking, feeling and doing—will be more profound, even, than those which marked the start of the Christian Era. In comparison, the Renaissance, with its singling out and glorifying of the individual personality, will seem a minor event.

A new social order, while in the making, is always linked to the previous one by a transitional period of disorder. In a limited operation—for example, a housing project—we clear the ground before starting to rebuild. Existing structures are reduced to rubble and

carted away prior to new construction. Meantime no one lives in that area, for it is not habitable. But when human society itself undergoes revision, there can be no such thing as temporary living quarters while the job gets done. There is no place to go. What is more, the main job is not merely to alter the physical surroundings, but to revise the tenants themselves. This means that destruction of the old and construction of the new must somehow take place at one and the same time.

I suggest that we are now in the seemingly chaotic first phase of such a transition, when demolition is painfully and unmistakably apparent, but when new construction is not yet recognized or accepted as such. We protest bitterly as we find ourselves dislodged from familiar arrangements which had come to feel just, right, proper, or even unchangeable. When our newspapers from time to time carry accounts of persons evicted from ancestral homesteads which were located on sites where, let us say, a lake is to be formed to serve as a reservoir, we sympathize with such dispossessed individuals, but we justify the community's right of eminent domain—its condemnation and confiscation proceedings—on the ground that the good of the many takes precedence over the vested interest of the few. Yet when it comes to feeling ourselves pushed around and disturbed by conflicting pressures in the still more personal and precious realm of our beliefs and attitudes about ourselves, we lack even such consolation as might be had from knowing that our private stresses take place in accordance with some detailed master plan which would make sense of and possibly justify it all. We are quite sure, instead, that our plight results from no one's deliberate design.

Fortunately, it has become possible at this stage to realize what has happened and to seek new orientation. To put it bluntly, traditional views of man have ceased to be useful. They have failed in the task of supplying a basis of order for the modern world. As a matter of fact, from our present vantage-point it appears that they were inadequate all along, and when they seemed to work, we can see now that

*In revised form, an address which comprised the second lecture in a course sponsored by the Foundation for Integrated Education, "A Twentieth Century View of Man," given January 28, 1955 at Hunter College, New York.

this was due to man's ability to distort himself to fit unnatural patterns and thus make them seem appropriate. What was sacrificed in maintaining such an artificial fit between the individual's behavior and the community's theory of human nature—namely, organic integrity and balanced adaptiveness—can no longer be afforded in the present situation of having to adjust to a community grown suddenly world-wide. Vitality, long misdirected by arbitrary restrictions, is channeled to new creativeness, but so long as its full expression is inhibited by a confused loyalty to outmoded patterns, it must lack balance and full effectiveness.

IN this perplexing period our problems as individuals are unavoidably acute. How can we conduct ourselves so as to hasten, rather than retard, the necessary new construction? How can we retain continuity with the past, so that whatever remains valid of the older tradition may be preserved in the new? How can we recognize and give support to programs of action that are soundly conceived, and steer clear, meanwhile, of involvement in shallow evangelisms and picaresque causes?

Faced by the need for a rationale of unprecedented scope, we look to science as the authority best equipped to fulfill this requirement. But the science involved must itself be a transformed science. Until recently men of science have claimed for themselves a privileged position. They were to be left free to discover what they could about whatever might happen to attract their interest. If others then seized upon their findings and put them to uses that were not in the social interest, this was not, the scientists insisted, their responsibility, for they claimed immunity under the plea of neutral objectivity.

This attitude is fast disappearing. Now the very consequences of scientific achievement and technology on the lives of men have produced problems of such urgency as to generate at last intense and responsible scientific interest in human welfare. The new type of scientist still follows the lines of his own curiosity (this may be essential to sound work) but his curiosity has come full circle and is now focussing on man, and his investigations proceed against an ever-present background of practical concern.

The scientific picture of man which is developing under this new orientation is, paradoxically, in some respects like the view that was held by the ancients. Heraclitus, and other early thinkers, saw man as one with nature. It was only later that man, more preoccupied with self and with arbitrary codes of conduct, came to regard himself as apart from nature and on a higher plane. This later view is, of course, the one which still dominates our personal lives. "Soul" or "mind" we cherish, for these, we feel, are at the core of our sense of value. "Body" or "matter" we try to subdue and keep subordinate. But just how it is that intangible soul or mind can be joined to and can exercise control over the "animal body" in an

"external world" has remained a perpetually troublesome question for religion and philosophy.

Just why it was that the early unitary view of man and nature was abandoned in favor of dualism, which sees the world as split into irreconcilable opposites of one sort or another, is not clear, but Whyte, in *The Next Development in Man*,¹ has presented a brilliant speculative account of how it occurred. We are more concerned here with what have been the consequences of dualism and what is to be gained if we can now surmount it by arriving at a unitary view that is appropriate to our own times.

PREVIOUS attempts to overcome the unsatisfactory split between mind and body have been mostly of the sort where one of the pairs of opposites was simply denied. In the kind of monism called materialism everything becomes material, including such phenomena as had "mistakenly" been regarded as mental. Modern physicalism supposes that there is nothing which is not ultimately reducible to the subject matter of physics. Correspondingly, in idealism or panpsychism everything is considered as somehow mental. These one-sided monisms are clearly not constructive solutions, but the mere pretense of having succeeded in squeezing both parts into the category of one's own preference.

For science, as it now converges on man as subject matter, dualism has no legitimate status. It is seen as a gigantic mistake, a pseudo-problem with which man has bedeviled himself for more than two thousand years. No task is posed for science of having to join "mind" and "body" in a workable relationship—for it does not separate them to begin with! Man takes his place as a species evolved like other living organisms by a dynamic, self-organizing cosmos. In such a context it becomes unthinkable that man's functions—including those which for convenience may be called "mental"—should be treated as entities existing separately from his structures, or, except for expressly limited purposes, that the workings of his body should be examined in isolation from the surroundings which are necessary to and which actually participate in the living process. The practical benefits of treating mind-body-environment as a single system composed of interdependent subsystems has already been recognized by the intelligent public in the accomplishments of "psychosomatic medicine."

THIS new approach differs from all previous ones in its determination to maintain steady contact with all that is relevant. It insists that phenomena can be genuinely understood only when studied in their full natural context. When they are dealt with piecemeal, ways may be discovered to obtain immediate practical effects of a limited kind, but these are prone to be

¹ Lancelot Law Whyte. *The Next Development in Man*. Holt, New York. 1948.

at the cost of unforeseen and unwanted "side effects" which may not be identified until much later. In medicine this has come to be called "treating the symptom instead of the disease."

To deal with problems in their full context seems at first impossibly difficult, yet in our personal lives when we do achieve this from time to time it is experienced as the most natural thing in the world. Our action then flows spontaneously from awareness of a current need, the relevance of past experience, and the probability that we can guide the matter to a successful finish. We "feel" our way along, with no need for formal decisions or jaw-clenching resolutions. But on most occasions we fall short of such integrated action due to the rift between what we "want" to do and what we feel we "ought" to do. A kind of dualism pervades our conduct—this time a split between what have been called "selfish aims" and what we have been taught to believe we "owe to society."

This relentless driving of ourselves, this imperious need to force ourselves to do deliberately what we don't want to do, is seen by naturalistic science to result in gross impairment of health, efficiency and happiness, both for the individual and the community. That it is wholly unnecessary, except as one generation after another foists it on the next, is clearly revealed in studies of the "socialization process." This blanket term covers whatever society does, particularly in the early years, to make the little human animal conform to its specifications for becoming a member in good standing. It includes the teaching of language and implantation of the local moral code. The parent, by and large, rewards or punishes in the child what he himself was rewarded or punished for, with the result that basic patterns are passed along from one generation to the next.

IN this fashion man, unlike any other species, obtains a stock of ready-made solutions to problems which have been painfully worked out over the course of many lifetimes. The advantages, to be sure, are inestimable. What has been largely overlooked, unfortunately, is the extent to which the human young are at the same time crammed with sanctified false solutions which narrow their vision once and for all and set limits to intellectual and emotional development.

Even if the stated intentions of the child-training program go unquestioned—for instance, to bring up decent, productive citizens—the methods used, as seen by behavioral science, are grossly inept and even partially self-defeating. The effects of punishment, to take an outstanding example, have been repeatedly demonstrated both in the laboratory and in the clinic to be far different from what has been universally supposed. Whatever behavior is punished may, it is true, disappear from sight and thus give rise to the notion that the individual has learned his lesson. But this is precisely parallel to the situation which in medi-

cine is condemned as "treating the symptom," for the punished behavior is not eliminated from the repertory—that is, from the urgent tendencies to action—but is merely driven under cover. The punished individual must now devote attention and energy to holding it back and keeping it suppressed. He must, as he has so often been directed, "watch himself." If this holding back does become automatic and unaware—that is, if suppression gives place to repression—then the individual, without knowing it, loses contact with this area of his experience. He no longer thinks about it, but he has bought this relief at the price of a chronic partial paralysis of action which is inappropriate to a healthy, living organism. He finds himself pent up, restless, unable to relax fully even in calm surroundings, and driven to an endless search for distractions.

Much of what gets punished in childhood is merely the precocious appearance of behavior which is not only sanctioned in the adult but demanded of him. But the individual who has been drilled for years in the role of dutiful child does not readily display the initiative, ingenuity or authority which is appropriate to the adult. He has learned too well to be a child and continues during adult life to block behavior which, formerly punished, is crucial to intellectual and emotional maturity. Unorthodox responses, when they do break through, give rise to anxiety or guilt and the quick resumption of tense control.

This is the epidemic condition clinically diagnosed as "residual tension." It is conspicuous in stiff, shy, or withdrawn individuals. In others it manifests itself indirectly in complaints of aches and pains, cramps and tensions, and "run down feeling." It is not enough for such persons to subscribe to the motto of "you must relax," for the over-socialized person cannot afford to relax under circumstances which would tempt him to "talk back" or otherwise "get excited." Unless he stiffens against emotional promptings and "puts them out of his mind," he fears that he will "lose control" and "go to pieces."

THE defenders of our dualistic tradition have been properly fearful of emotion, for it leads to spontaneous, whole-hearted action which scorns hypocrisy and superficial good manners. It manifests itself when something of importance to the organism is at stake. Fear, for instance, occurs inevitably when life, or anything highly valued, is seen to be endangered. Likewise, anger is the natural response to whatever arbitrarily frustrates one's ongoing activity. Such emotions are energizing, enabling the organism to perform feats of physical exertion of which it is otherwise incapable. But in our tradition fear is branded as cowardice and anger as temper, with the result that the individual, if he can, learns to hide such emotional reactions even from himself. Then, denied proper expression, they find partial discharge in vicarious experience—witness the addiction to sado-masochistic movies—or else, interfering with basic physiology,

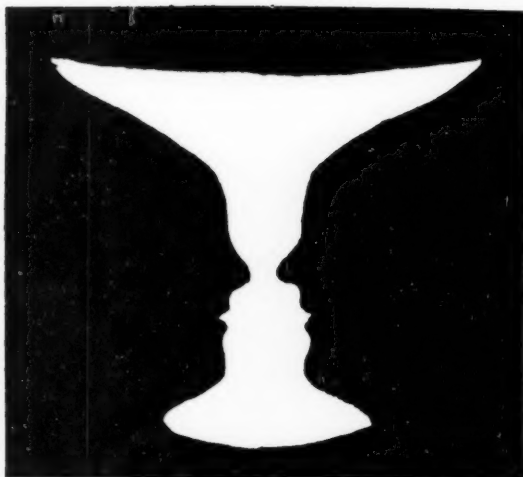


Fig. 1

they express themselves in hypertension and other psychosomatic ailments.

It is obvious that if we wish to inculcate a naturalistic view of man, then the early socialization process is the point of greatest strategic importance. Some headway has already been made in changing our manner of dealing with the child. But what of the rest of us, already grown, who are unwitting products of a dualistic training? If sufficiently motivated, it is possible for us to give ourselves a kind of mid-stream overhauling. This is well worthwhile, from the standpoint not only of our own personal effectiveness and enjoyment of life but also of our effect on others, particularly our children. What is required is a readiness to take a fresh and searching look at ourselves and our behavior in the light of naturalistic concepts, and to experiment with previously neglected or rejected techniques for dealing with ourselves and others.

During the past several years more than six hundred adults in university classes, working with mimeographed material, have performed what were called "Informal Experiments in Self-Awareness." These supplied orientation in naturalistic concepts and suggested "safe" methods for reorganizing one's ways of feeling, thinking, and doing. Nearly all of these students reported substantial benefits.²

² A version of the "Informal Experiments in Self-Awareness" has been printed as the first half of the volume by Frederick S. Perls, Ralph F. Hefferline and Paul Goodman, entitled *Gestalt Therapy: Excitement and Growth in the Human Personality*, Julian Press, New York, 1951.



Fig. 2

WITH regard to most of the things that we have been taught since childhood it never occurs to us that there could be another, and perhaps more effective, way of looking at them. As a demonstration of how difficult it may be to see something on a re-organized basis, two ambiguous pictures are shown. (Figs. 1 and 2)

When looking at fig. 1, the observer should fix his gaze upon a point approximately between the noses of the two faces. When this is done, it is obvious that the sense data do not change. Nevertheless, the observer can shift from the meaning "faces" to the meaning "vase" at will. Furthermore, he feels the shift of meaning occurring in his mind as a kind of dynamism. This is the type of phenomenon included in the gestalt term "closure."

In fig. 2, at first glance you are likely to see a young woman in three-quarter view to the left. Or you may be that one person in about five who first sees an old hag facing to the left and forward. Whichever picture you see, your task is to see the other. To do this you must let go of the picture you already have—in effect, destroy it—and use the parts to construct its alternative.

The trick here is that various details have a dual function. The long promontory which is the old hag's nose is the whole cheek and jaw-line of the young woman. The hag's left eye is the young woman's left ear, her mouth the young woman's velvet neckband, her right eye a bit of the young woman's nose, etc. No attempt to "will" to see the old hag or the young woman will be effective, but if you let your eyes play

over the picture instead of staring fixedly, there will be a sudden spontaneous reorganization of its parts—what the gestalt psychologists call the “aha! experience.”

ATTAINING a unitary, naturalistic view of man is, of course, not so simple. Yet it appears that our difficulties in reaching it are of the same sort—that is, we are so full of ready-made responses that these tend to choke off the novel responses which would be more appropriate to our present situation. In many instances we rationalize our stereotyped behavior by saying, “Society requires this of me,” when, as a matter of fact, our present society may be quite unconcerned in the matter, as we can readily discover through a little personal experimentation. A more correct version would be, “I require this of myself, but, since it would make me temporarily uncomfortable to change, I pretend that society forces it on me.”

A naturalistic approach, whether by the scientist to his subject matter or by the individual to his per-

sonal life, reveals a simpler structure than was supposed to be the case. Nature is economical of patterns and processes of development. Seeming complexity is frequently nothing more than the diversity provided by endless variations on a few basic themes. Much of the complexity has been in ourselves and in our traditionally distorted ways of looking at the objects under investigation.

While man was immature there were some temporary benefits, no doubt, in the dualistic practice of tearing apart and considering independent the members of such pairs as mind and body, subject and object, impulse and self-control, organism and environment, individual and community—and, especially, cause and effect. As integration of knowledge proceeds, however, these exaggerated contrasts tend to fade into continuous, unitary inter-relationships. False barriers break down to reveal one great, ordered system, the universe, with various subsystems set off by boundaries which are flexible, permeable—not walls, but instrumentalities of ordered communication.

THE illustration* on the cover is not an ambiguous picture, but an incomplete object, with much of the detail which would ordinarily be present left out. However, the bits which are present are in their proper positions. To see and name the object involves a kind of “subjective” filling in of the blank spaces in such a way, as the gestaltists put it, as to effect “closure.” Staring fixedly at what is given, or deliberate attempts to force meaning on the hodge-podge of parts, usually blocks the spontaneous process of organization. Freely shifting the gaze from one part to another and taking an attitude of curiosity rather than impatience is the most favorable approach. If the picture still does not come, it will at some later time when examined fresh. (To verify your perception, identification of the picture is given on page 20.)

Figs. 1 and 2 on page 10 are also closure figures. The reader is recommended to study the working of his own mind while he observes the meaning of fig. 1 shift from vase to faces, and back, over and over. The dynamism of meaning in his own mind will thus be made evident.

The Editors wish to announce that the Index to Volume 11, which was to accompany this issue, is still in preparation. It will be sent out with the November issue.

*From Roy F. Street's *Gestalt Completion Test*, 1931, Bureau of Publications, Teachers College, Columbia University.

EXPERIMENTS IN INTEGRATED EDUCATION:

An Integrated Program of High School Mathematics

GROWING out of a desire on the part of many who are concerned with the education of high school students to improve the teaching of mathematics, the University of Illinois Committee on Secondary School Mathematics has instituted an experimental program which is currently being conducted in four Illinois high schools, one high school in Michigan, and one high school in Missouri. This program is a joint effort of the College of Education, the College of Engineering, and the College of Liberal Arts and Sciences of the University.

The program which is being developed attempts to integrate the traditional mathematics subjects and to include many basic ideas from modern mathematics which are absent from traditional courses, while eliminating many topics which are obsolete or seldom used. It aims to teach mathematics for understanding rather than merely equipping the student with a "kit of rules." It is intended for students who take one, two, three, or four years of mathematics at the secondary school level and is designed for the potential scientific specialist, for the pre-college but non-scientific student, and for the able student who will terminate his formal education upon graduation from high school.

First year materials are being tested in seventeen classes in six schools. Second year materials are currently being used in thirteen classes in five schools. Third year materials are being tried for the first time in three classes in three schools. During the next five years the committee plans to teach the complete four years of the program in about twenty high schools, to develop new techniques of testing the extent of student understanding of important mathematical concepts, and to begin a follow-up study of these students in college.

Soon after the committee's organization in 1951 with the original purpose of helping Illinois High Schools to meet college entrance requirements, it was found necessary to re-examine high school mathematics in its entirety. An abundance of reports and recommendations made by others was found to exist. These indicated the desirability of interesting more high school students in mathematics, the necessity of teaching more of the important ideas of mathematics, and the importance of the students' acquiring a broad understanding of mathematical principles instead of mere manipulative skills. No program for the accomplishment of these worthy aims existed, so the committee is trying to supply this need.

One of the critical aspects of the committee's program is the in-service training of participating teachers. This training involves the "transmission" of such intangibles as feeling for creativity in mathematics, the willingness to explore the unfamiliar and the un-

conventional, and a sensitivity to what is defective and "lifeless" in conventional mathematics courses.

Some of the features of the committee's program are as follows:

1. Since traditional high school mathematics is divided into compartments—algebra, geometry, etc.—the essential interrelatedness of these fields is not adequately presented. An integrated sequence for a four-year program of topics from these various compartments can better present their interrelatedness and make it possible to teach more mathematics in the same amount of class time.

2. The content of traditional courses tends to emphasize the teaching of isolated skills. Instructional materials can be organized to emphasize understanding of mathematical concepts. This understanding will facilitate the learning of appropriate manipulative skills.

3. Two-thirds of high school students in the United States do not study mathematics beyond the first year of high school. One year of conventional algebra is of little use for these terminal students. It is also far from the optimum foundation for the training of the potential specialist. A sequence of topics for the 9th year including some algebra, some geometry, and some trigonometry, and taught more in the spirit of contemporary mathematical thinking can better meet the needs of both these groups and may interest more students in continuing in mathematics.

4. Some conventional programs force a student to choose between a mathematical and non-mathematical vocation at the beginning of high school. The proposed program allows this choice to be postponed by offering to all capable students a broad introduction to mathematics. After such an initial course, a student has a basis for a more intelligent choice of his future vocation.

5. A student's experience in high school mathematics should convince him that mathematics is not a static subject about which everything is known. The conception of mathematics as a growing human enterprise can be built by including those modern developments and points of view which can be taught successfully in high school. Such experimentation with the introduction of new concepts and ideas into secondary school mathematics is needed. The University of Illinois is supporting such experimentation.

6. The proposed program can significantly reduce the gap between the content and point of view of college mathematics and high school mathematics. This program attempts to provide for the highly capable student by emphasizing understanding and by including highly challenging material. In conventional high school mathematics textbooks there is not enough

expository material to provide practice in careful reading. In the proposed program, the instructional materials provide ample reading practice resulting in increased ability in precise communication.

7. This program is designed to bring about significant changes in the learning and attitude of students. However, these results can be accomplished only if the teachers who participate in the program have been helped to achieve the necessary competence.

The significance of this program can hardly be underestimated, for mathematics as it is taught in most high schools usually is dominated either by a philosophy which insists that it is the "discipline" of mathematics that counts, or by the operationalist and pragmatic point of view that "the average student" needs only enough mathematics to enable him to check the sales tape from the supermarket. In either case, the experience of "taking" mathematics is a deadly, meaningless chore and the concepts of mathematics and the philosophical insights into the realms of the ideal and the abstract can hardly ever be gained even by the brightest student.

We have reviewed the printed first year materials with some care and report that we perceive a very high degree of integration in them. The methodology seems to be excellent. In the hands of teachers who can, themselves, reorient their thinking, we feel that the objectives of this committee can be achieved. It will be interesting to check the results of this program when the students who are now taking it move on into college. Work such as this should also materially assist in reducing the present shortage of science and technical recruits in our schools and colleges.

The University of Illinois is to be commended both for making it possible for three separate divisions to cooperate in this venture and for the demonstration that such cooperation is possible and can be made so fruitful. It is also to be hoped that the committee may be able to find large scale funds (which the University, however generous in its present support, cannot be expected to supply) in order that it may be able to bring about the significant change in the teaching of high school mathematics in this country which is sorely needed.

—Harvey W. Culp

SOURCE READINGS: INTEGRATIVE MATERIALS AND METHODS

The Values of Mathematics

"VALUES and the Study of Mathematics" is the title of an article by Howard F. Fehr that was published in *Scripta Mathematica*, vol. 21, March, 1955, pp. 49-53. The author reminds us that in the last few decades those responsible for the curriculum in both the secondary schools and the colleges have become more and more concerned with the individual student. "This concern for the individual is an outgrowth of the search for values to be achieved through the educative process.

"... Values are those attributes both intrinsic and extrinsic to a body of knowledge which the individual acquires because of the personal satisfactions derived from the acquisition of the knowledge. Thus we take the position that values are not apart from science but are continuously interacting with science itself. The continued study of science (or other bodies of knowledge) leads then to shifts of emphasis or even new positions on value."

Dr. Fehr explains that maturing personality emerges from desirable change in behavior which in turn comes about through learning and only through learning. As one studies, he creates a liking or dislike for certain facts, certain ways of thinking, and certain

types of problems which bias his further study in certain definite directions. "Moreover the abstractions, generalizations, and structure the individual develops, because he has a feeling for them, in turn affect his valuation of all future knowledge. Thus values and personality are bound up with learning and acquisition of knowledge in a continuous reversible interaction."

In summarizing the values intrinsic to the study of mathematics, the author says, "Thus, the very study of mathematics gives us a great scientific method of thinking, a pragmatic outlook on knowledge, emotional satisfactions or mental pleasure, a sense of permanency and continuity, and creative techniques of thinking about number, space, and symbols—values that make mathematicians the kind of people they are."

It is the values outside the subject of mathematics itself that are of main concern to the general educators. "Because such educators and teachers are often uninformed of the nature of mathematics, they frequently assign non-related values as an outcome of mathematics study. . . . They are: neatness and cleanliness (neither of which are necessary nor sufficient for mathematics); self-reliance; making of wise decisions (as evinced by bad decisions made by mathematicians in areas outside and within mathematics); cooperation and leadership; expression of ideas pub-

licly; and the infinitude of God. Great and esteemed as these values may be to some people they are not in or about the province of mathematics and should not be sought there."

Then the author discusses the values that can be enlightened and strengthened in the field of mathematics. "Information is of high value, and mathematics supplies a means of communicating information of our physical, economic, and social environment. The operations of arithmetic supply the means for talking about per cent, percentage, base, discount, interest, commission, etc., that inform us of financial affairs. The relations of geometry give us information on measures, size, direction, projection, and so on, that inform us of the construct of the physical world we live in . . .

"We prize a thoughtful citizen—a problem solver . . . Mathematics can sharpen, by contrast, its own logic with that used in the life of a thoughtful citizen. Circumstantial evidence contrasted with a geometric deduction gives the student a clearer picture of the place and force of probable as compared with complete proof . . . Mathematics offers an understanding of the nature of proof and the relativity of truth.

"The human race places high premium on the possession of tools, both manual and mental . . . In the home, in everyday living, in industry and engineering, in the various physical, biological, earth, and social sciences, mathematics has become, and is becoming more so, an indispensable tool." The author goes on to explain that without mathematics it is very difficult to understand a scientific and statistical age or to achieve a cultural pattern of behavior well adapted to living within this age.

"Finally, in every age, among every people there has been a zealous search for truth. . . . Mathematics is one of the great ways that man has devised that offers itself for the search for truth.

"The values we prize as citizens of the world, namely: information, logical thought, operational tools, cultural enrichment, and the search for truth are not intrinsic to mathematics, but this great 'Queen' of the sciences has, from the very earliest historical times, stooped humbly to be 'Servant' to these values and thereby nobly enriched them for all mankind."

—Ruth Lofgren

Mental Growth

L. L. THURSTONE of the Psychometric Laboratory, University of North Carolina, Chapel Hill, presented a paper entitled "The Differential Growth of Mental Abilities," at the spring meeting of the National Academy of Science in Washington in April 1955.

Methods of multiple factor analysis have been developed since 1930 for the purpose of isolating and identifying the components of human intelligence. Many investigators have isolated a number of these

which are called primary mental abilities. This study reports on a comparison of mental growth curves of seven of these primary abilities using data obtained for large groups of children over the age span from 5 to 19.

The growth curves presented in this paper are S-shaped with inflection points at 3 to 7 years of age. They all approach maturity asymptotically.

The seven primary mental abilities here studied are: Visualizing Space Factor S, which represents the ability to visualize rigid figures in three-dimensional space. (Several other visualizing factors have been isolated but norms are not yet available for school populations.) Verbal Comprehension V, which represents the ability to comprehend verbal meaning of single words or continuous text. This ". . . is undoubtedly the most important of the mental abilities for academic achievement."

Number Factor N is quite narrow and represents facility in numerical manipulation but does not extend to mathematical reasoning or to the formulation of statement problems in arithmetic. The author states that such tasks involve other factors.

The mental growth curve for Reasoning R "is really a combination of two primary mental factors for induction and deduction. The inductive component here represents the ability to discover the rule or principle of the material that one is working with . . . it transcends its modalities. It has been shown to be the same factor whether the inductive task represents visual, or verbal, or quantitative tasks."

The Perceptual Speed Factor P represents the ability to cover details in the perceptual field and although it "is definitely in the cognitive and intellectual domain it is not necessarily associated with capacity for abstract intellectual work."

The Immediate Memory Factor M represents the ability to memorize a set of paired associates. "It is distinct from visual memory and incidental memory which are different primary factors."

Word Fluency Factor W represents the ability to produce words which are required for a given context as distinguished from the ability merely to understand words that are presented.

For the purpose of making a rough comparison of the rate of maturation of these abilities, the age at which the average mental growth curve reaches 80% of the adult performance is taken. "With this criterion the Perceptual Speed Factor P reaches [this level] . . . at the age of 12. The Space and Reasoning Factors [S and R] . . . at age 14. The Number and Memory Factors [N and M] . . . at about 16. The Verbal Comprehension Factor [V] develops more slowly and it reaches the same relative level at age 18. The Word Fluency Factor W matures later than 20. It is not surprising to find the Perceptual Speed Factor maturing rather early and the Verbal factors maturing quite late. In other studies it has been found that the first Closure Factor reaches adult-level at about the age of 10 or 12, so that children of that age do as well on the average as educated adults."

The author closes his paper with interesting implications in these differences in rate of maturation of the mental abilities. He indicates that individual differences in the rate of maturation undoubtedly exist and that some children may mature more rapidly in some factors than in others. This has important bearing upon school curricula and teaching methods. Certainly, data such as this imply that there is no one sure method of teaching all children and that all children will not be aided in their learning by elaborate visual aid programs in our schools.

—Harvey W. Culp

Evaluation of Intelligence Tests

THE necessity of evaluation of intelligence test scores with reference to cultural and environmental differences is brought forward by Philip E. Vernon, Professor of Educational Psychology at the University of London, in his paper, "Use of Intelligence Tests in Population Studies," published in the December, 1954, issue of *Eugenics Quarterly*, Vol. I, No. 4. Investigators of intelligence test scores have usually aimed at comparison of the innate intellectual capacity of different national or racial groups, or subgroups, but they have become increasingly aware that their test results might be affected by cultural differences. Recently the Iowa investigators, Bernardine Schmidt and other American psychologists, have published evidence of very large effects of early upbringing and of education on the I.Q. Prof. Vernon notes that although these views, together with Communist condemnation of intelligence tests, may be exaggerated, even the more cautious students of the heredity-environment problem, such as Burks and Burt, admit that environment may account for roughly 25% of the variance in scores on reliable tests. Unfortunately, genetic population differences are usually quite small, hence even a minor cultural difference may seriously distort, or obliterate, a genetic one. For this reason Prof. Vernon feels that our present tests cannot provide direct proof of the existence of genetic family differences.

"This figure of 25 per cent still implies that the major differences between children of high and low I.Q. are innately determined *within any one cultural group*, such as the British or the American whites. But it is almost certainly an underestimate when cultural differences are greater, as between British whites and African Negroes, or even between British adults who have received advanced secondary or tertiary education and those who left school at 14 or 15 . . . Genetic influences are predominant only so long as the childhood environment and primary schooling are relatively homogeneous or standardized for all members of the populations being tested. This means that most national or racial comparisons are entirely illegitimate, since there are such wide cultural differences in the

childhood intellectual stimulation and the schooling that different countries provide. Anthropologists such as Nadel and psychologists with experience of race differences like Biesheuvel have further pointed out the effects of motivation and attitude to taking tests . . . The cultural pattern is often very different in, say, Africa or aboriginal Australia. The attitude to working at speed may be absent, and the accepted method of tackling problems may be group discussion rather than individual effort. Thus their performance on European or American-made tests is likely to be hopelessly unrepresentative."

Prof. Vernon makes the point that these findings may sound disheartening, but that actually they do not imply that all population studies of intelligence are invalid, only that very much greater precautions are needed than have usually been taken in the past. However, they do mean that the search for "culture-free" tests is illusory, although some progress might be made in the direction of culturally intermediate tests. If tests are devised from familiar words and situations which are suited to the ways in which the group tested normally expresses its intellectual capacities, they are fairer to that group. As Prof. Vernon points out, no one has tried applying to British or Americans a test designed by Australian aborigines to suit their ways of expressing themselves. "Careful anthropological investigation would be needed first to discover the forms taken by the most complex intellectual functions in each group. We must realize that intelligence itself is a different entity in each group. True, it is limited by some universal innate potentiality (which we have no means of measuring), but the way it is realized or manifests itself depends on the group's values and ethos."

The comparison of subgroups within a culture, such as members of different-sized families, presents other problems. The most fruitful approach, according to Prof. Vernon, is to control or match cultural differences between subgroups, much as Chronological Age has normally been matched in all investigations of children's intelligence. "Numerous research studies such as Burks' and Leahy's, Van Alstyne's and Hebb's, indicate the factors providing intellectual stimulation in early childhood which need to be held constant . . . By applying a carefully constructed rating scale of these relevant environmental influences, it should be possible to match, say, families of 2 and 4, or of 5 and 9, children; though we could hardly hope to equate families of 1 and 12 children. Adjacent social-class groups might be similarly compared . . . The trouble is, however, that this procedure would probably over-compensate; for only the genetically more intelligent large families might provide as good environmental stimulation as small families."

Prof. Vernon's rather discouraged conclusion is that the use of intelligence tests in the investigation of fertility problems should be based on orphans or foster children whose true parents' families differed in size.

—E. B. Sellon

Learning During Sleep

MANY people are familiar with the concept of using a tape recorder or some other means to present material auditorially during sleep in an attempt to facilitate the learning of that material. C. W. Simon and W. H. Emmons give a critical analysis of this area of research in "Learning During Sleep" published in the *Psychological Bulletin*, Vol. 52, No. 4, 1955, pp. 328-342.

"Approximately 22 years of the average man's life is lost in sleeping. Economically minded persons and harassed students have long searched for some means to use this time to further advantage. For nearly a third of a century, now, there has been a growing interest in the possibility of trying to learn while one sleeps.

"The science fiction writers were among the first to propose sleep-learning as an educational technique. Gernsback, Huxley, and others have used the concept in fiction. Popular news and picture magazines, citing experimental evidence, constantly reinforce the public's interest and misinformation about this osmotic form of education. From time to time, a national news service will release a story telling of some individual who works for a living by day and studies chemistry, operatic arias, or other lessons while sleeping at night.

"Following closely on the heels of public interest have come the entrepreneurs. Commercial firms have sprung up throughout the country selling recording devices which automatically turn on and off to permit the individual to learn while he sleeps. The majority of claims have been based on distorted facts, statements by unqualified authorities, and armchair hypotheses."

The authors critically evaluate ten experiments in the field in regard to the experimental design, the statistics used, the methodology, and the criteria for sleep. These studies included attempts to teach the Morse code to Navy men, to teach a group of boys to stop biting their fingernails, and to teach Chinese.

The authors think "it is highly speculative whether or not the studies reviewed presented any acceptable evidence that learning during sleep is possible. All of the studies had weaknesses, and the inadequate control of a number of experimental variables makes the validity of the conclusions drawn by many of the experimenters unwarranted. The conditions under which the positive results were found tend more to support the contention that some learning takes place in a special kind of waking state wherein subjects apparently do not remember later on if they had been awake."

One gets the impression after reading the critique by these authors that there are still as many questions to be answered in this field of study as there were before the research began.

—Bill Nicholson.

Is Parapsychology Science?

IN the January 1955 issue of *American Scientist*, Edwin G. Boring makes a critical analysis of "The Present Status of Parapsychology," based mainly upon *Modern Experiments in Telepathy*, by Soal and Bateman (Yale University Press, 1954). Prof. Boring reports his extended interest in the psychology of scientific controversy, and in parapsychology because it is controversial.

Discussing the difficulty of proving the existence of the "supernormal," the author points out that if a physical or psychological explanation of such phenomena can be found, they become "normal," and that it is only by failing to find such an explanation that you can "succeed" in establishing the existence of the supernormal. He feels that it is more important experimentally to establish correlations between paired events, using the reliability of such generalized correlations as an initial hypothesis.

Soal and Bateman devote a large portion of their book to a factual account of experiments in telepathy and clairvoyance, which they summarize as being of the order of 10^{10} to 1 against the hits being chance. Prof. Boring's view is that in experiments of this kind the fit of probability models can never be tested empirically, because every observed deviation from expectation still fits the model, which tells you merely how improbable the deviation was. He is not sure that parapsychology is ready to use the basic scientific principle of control, but says, "Not until we get away from this *a priori* conception of chance are we going to be able to write a good operational definition of telepathy." He finds one of the weaknesses of parapsychology is its lack of a satisfactory independent variable.

It is around the question of whether or not parapsychology is science that controversy is warmest. Boring feels that this is not a sensible question, and that it would be more pertinent to ask: "Can you formulate an operational definition of telepathy and clairvoyance?" He suggests such a definition will not be clear-cut in such a very young science, but that eventually something provable may result.

From his position as a positivistic physicalist, the author is critical of Soal and Bateman in their adherence to a mind-body dualism. He feels that the scientific protection against "magic," i.e., uncontrolled imagination or intuition, is positivism: the position that one must never impute to a concept more properties than its operational definition allows. And that when parapsychologists imply that ignorance of the nature of ESP should make us hospitable to the acceptance of some new principle that contradicts physical law, "they are offering a little magic . . . Scientists . . . are not angry, I think, because new scientific hypotheses are being proposed, but because they think the parapsychologists transcend their observations."

Boring concludes that parapsychology forms one of the "in-groups" within scientific activity, a small

minority whose motivation sustains long and arduous research for seemingly small results. "Of its importance in the developing scientific skein, posterity will be able to judge, and you cannot hurry history."

—E. B. Sellon

Organic Education

THE need to develop a philosophy of education which synthesizes the valid elements from conflicting philosophies of education has resulted in an attempt by Frank C. Wegener of the University of Texas to formulate such a coherent theory of education. Writing in *School and Society*, June 11, 1955, Vol. 81, on "The Organic Philosophy of Education," Prof. Wegener defines the distinguishing beliefs of a philosophy of organism as follows:

"The Principle of Bipolarity is fundamental to all thought and reality; the universe is organic; all of reality is connected and related, not truly bifurcated; entities are possessed of a complex structure comparable to that of living beings; reality is to be understood in terms of whole-part and 'one and many' relationships." Through the sustained application of such postulates and principles, Prof. Wegener hopes that an educational synthesis beyond the stage of contemporary eclecticism in educational theory and practice may be achieved.

In discussing the principle of Organic Bipolarity, the author defends himself against any possibility of misinterpretation of the term as dualism by defining Bipolarity as a "unity of opposites," a principle found in various forms in many Greek philosophers, among them Pythagoras, Heraclitus and Plato. He says, "Plato was a bipolarist in his exposition of the 'unity of opposites' in such seeming bifurcations as the One and the Many, Identity and Difference, Same and Other, True and False, Being and Non-Being, Rest and Motion, Permanence and Change. The conception of the unity of opposites is truly a metaphysical conception, and also manifests itself on the observational level."

Prof. Wegener lists some of the outstanding postulates of the organic viewpoint briefly: "1. Reality is organic rather than singularly materialistic or idealistic . . . Reality is complex and therefore cannot be completely identified as unity or plurality, except in a qualified sense; it is both one and many. 2. Man is a microcosmic organism embodying the essential elements of the macrocosm . . . Society itself is in a sense organic. Man is not merely an organic part of society, he is intrinsically a part of the organic cosmos. Thus, man's self-realization necessarily transcends social ends, although social being is necessary to self-realization. 3. Most of what Plato said is still philosophically sound, although many conceptions must be reconstructed in harmony with certain advancements of modern cultures, particularly with respect to scientific, philosophical, and political modi-

fications . . . 4. Professor Alfred N. Whitehead's Philosophy of Organism provides us with most of the requisite modifications of the Platonic-Aristotelian Tradition up through contemporary thought . . . 5. There is much of positive value in the educational doctrines of John Dewey . . . Most of the Dewey methodology is valid when reconstructed within the philosophical system of Organism."

In previous writings Prof. Wegener has postulated the "Ten Basic Functions of Man" as a basic framework for an organic educational theory. These universal and generic capacities, he proposes, are intellectual, moral, spiritual, social, economic, political, physical, domestic, aesthetic, and recreational. "These functions, although delineated here separately, are actually organically and intrinsically interrelated. Like the organs of the body, they are in a sense separable in structure and function, but they are essentially interdependent and organic. It is the task of education to assist in the actualization of these common functions in what might be termed the education of man *qua* man . . . Yet, within this general education of man as man, there must also be emphasis on the development of the person as an individual."

Prof. Wegener holds that an organic philosophy of education is essential to the reconciliation of the valid elements of the conflicting theories of education, and that these conflicts may be seen as bipolarities, or unities of opposites. Also, that there are two legitimate spheres of educational experience: ordinary life experience, and the ordered intellectual experience of school. When it is realized that school is in one sense a process of ordinary experiences, as well as systematic intellectual experiences, the importance of Bipolarity in the educational process is seen. The two phases of the total learning experience—that of viewing the particulars and the many in ordinary life experience, and that of learning in the abstract, ideal realm—are reciprocal. He concludes:

"Organic education, although rooted in the Platonic Tradition, is thoroughly devoted to the democratic ethos . . . Democracy means a guarantee of freedom in the pursuit of happiness—or the Good. Democracy is not so much an end in itself as a means to the end or the pursuit of the Good. This places a tremendous responsibility on education to assist the individual in his quest for self-realization, self-determination, and the pursuit of happiness.

"Every person in a democracy must be a philosopher in actuality for he holds intellectual, moral, spiritual, social, economic, and political responsibilities. He must make decisions with respect to means and ends and with respect to values . . . No responsible citizen can escape these philosophical problems. He must be educated for freedom and responsibility. The organic philosophy holds that the Good is both immanent and transcendental. The lure of the true, good, and beautiful moves mankind. Educationally, then, we must assist each other in our continued quest for the good life."

—E. B. Sellon

NEWS AND NOTES

DURING the week from July 11 to 17, the British Society for Psychical Research, in collaboration with the American Parapsychology Foundation, arranged for a conference on "spontaneous phenomena" in the beautiful setting of Newnham College, Cambridge, England. The Society for Psychical Research is known and distinguished for its long established interest and its researches in problems of psychology once called occult. Its preoccupation with matters of extrasensory perception and thought transfer, clairvoyance, apparitions, phantasms of the living and the dead, haunts and poltergeists is well known, even if it has at times been misunderstood and scorned by men in the traditional sciences. Within this vast and ill-defined range of interest there are phenomena capable of contrived study and experimental examination, such as extrasensory perception and certain aspects of thought transfer and clairvoyance. For these, J. B. and L. Rhine, S. G. Soal, F. Bateman, and others have recently furnished a measure of positive evidence which has induced the most competent of statisticians to infer their occurrence beyond chance, and this circumstance invites consideration of the more volatile evidence for matters on which experimentation is extremely difficult but which the credulous throughout the ages have declared to be real and meaningful. It is to these phenomena, at present beyond the scope of scientific arrangement and contrivance, that the adjective "spontaneous" has been applied, and to their study and sceptic analysis this international conference at Cambridge has directed its efforts.

Participants and observers came from the United Kingdom, the United States, Denmark, France, Germany, Haiti, Italy, the Netherlands and Switzerland. Their interests ranged through all the sciences from physics to psychiatry, their attitude with respect to evidence of paranormal occurrences all the way from hardboiled scepticism to convinced and ready acceptance. The focus of all discussions was not so much a detailed and factual examination of "cases" as a genuine study of suitable methods by which reports alleging spontaneous paranormal events could be sifted, analyzed and appraised. Frequently the public-mental-health aspect—always ignored by the debunkers but of serious concern to the S. P. R., which hears the complaints of families that believe themselves harrassed by apparitions and poltergeists—and other social problems dominated the proceedings.

The meeting can hardly be understood unless it is put in its general contemporary scientific context. Natural science has lost much of its earlier dogmatism. Some decades ago physicists believed themselves in possession of the ultimate principles by which all phe-

nomena are to be explained. Proud in this possession, they felt the reasonable urge to classify imaginable experiences into two kinds: those which are compatible with the ultimate principles, the so-called laws of nature, and those which are not. The former were called normal or natural, the latter paranormal or supernatural, with a stigma of the fraudulent and unreal. The division between the two is dependent on the contents of the "laws of nature." Today we know well that the latter change as science advances, and that the changes are often radical. The mechanistic world picture of the last century is gone and something new, still in a state of evolution, has replaced the laws of Newton as basic axioms of nature. Hence the division between the normal and the paranormal is in flux, with the domain of normalcy engulfing some parts of what previously went as unexplainable. It is this wholly responsible liberalism, this controlled relaxation of the rigor of old-style mechanistic explanation, which makes many scientists look at conferences of this sort not merely with indulgence but with a new interest. Somehow, the atomic physicist has seen mysteries arising in the very heart of his science, and this experience has made him ready to consider, with due reserve, the mysteries reported elsewhere.

The meetings were opened by G. W. Lambert, president of the S. P. R. The first work session was devoted to the subject: "What contribution to psychical research can be made through the investigation of spontaneous cases." In introducing the speaker, Gardner Murphy, the chairman H. H. Price commented in a manner both sane and circumspect upon the nature and the meaning of evidence bearing upon spontaneous cases. He touched upon a problem which, though never clearly formulated, formed an undercurrent of many later discussions. It concerns the criteria of a valid or trustworthy experience.

There is a vague belief that the truth or falsity of a perception can be ascertained by an analysis of the circumstances immediately surrounding that perception. Objectivity, intersubjectivity are thought to be manifest within the perceptory experience itself. This, unfortunately, is an error. Hallucinations can be shared by crowds of people, and their vividness or clarity is no guarantee for the veridicality of a perception. We judge its validity by the context, theoretical and otherwise, in which it appears; whether it is acceptable depends in some way on its coherence with the rest of our experience. When a discrepant observation is made, we either reject the observation and retain the theory which it contradicts, or we reject the theory and retain the observation. Which we

do in the face of a single paranormal observation, or a small number of them, depends entirely on the firmness of our belief in the theory (or the "interpretation"). If we have a theory that is highly secure, as we do in certain parts of science, an obstreperous experience is sure to be rejected. In parapsychology, it seems, we hardly have any theory, any interpretation at all, and hence effectively a very limited set of criteria for corroboration or refutation of empirical evidence. The need for theoretical perspective, for principled interpretation, was stressed with eloquence by Professor Murphy.

The next lecture, by W. H. Salter, the genial and efficient spirit guiding the conference, dealt with the topic: "Phantasms of the living and the dead." It presented a history of reported apparitions along with an objective and noncommittal analysis of their statistics. The discussion was alive with searching questions and with strictures on the credibility of most accounts, and no trace of hushed and easy acceptance was anywhere apparent. Professor C. D. Broad took an active part in the discussions and made valuable contributions.

On July 13, the American investigator, Hornell Hart, spoke on "The experimental approach with special reference to travelling clairvoyance." In the sense of deviating from what is ordinarily regarded as normal and objective, this talk was probably the boldest of the series, and it encountered a maximum of sceptic response and appraisal. Another lecture by the distinguished astronomer F. J. M. Stratton had as its subject: "Haunts and other localized and iterative phenomena." It was a charming survey of cases, especially of reports by inhabitants of an English house built in 1660 on the site of an older mansion.

Discussion of the variegated phenomena commonly known as spiritualism was generally avoided during the meetings, the feeling being that they are less secure in their status, more easily faked and therefore much harder to appraise than the non-mediated effects which formed the main theme of these sessions. Only one paper was devoted to mediumistic phenomena, and this by the distinguished American philosopher C. J. Ducasse who, with characteristic methodological thoroughness, inquired into the significance of information coming from seances, its bearing on the question of survival, the meaning of the term, and what empirical evidence, if we had it, would conclusively prove survival. The title of his paper was "Method in the investigation of spontaneous paranormal phenomena."

Two psychiatrists, Dr. C. A. Meier and Dr. E. Servadio, developed the "Psychology of spontaneous cases." The connection between psychical research and the theories of psychiatry, especially Freud's, is remarkably close and interesting; much light was thrown upon reports of spontaneous cases by these experts, and the correlations established between psychiatric characteristics and prevalence of psychic experience proved illuminating indeed.

The frequent occurrence of accounts describing staircase noises, and of unnatural and often harmful movements of objects in houses and occasionally outdoors, has led to the designation of "poltergeist," the German word for "noisy spirit." The folklore relating to such spooks, while exceedingly abundant, presents certain features of invariability which may bespeak some fairly common cause of the reported phenomena. Mrs. K. M. Goldney presented an interesting collection of alleged cases, drawing upon her wide experience of counseling people in distress because of ghost-infested homes. Instances which cannot be dismissed as frauds, she finds, receive their explanation either on physical grounds or on the basis of abnormal psychology. Mr. G. W. Lambert presented a theory regarding the poltergeist phenomenon which explains common features in terms of a common cause: the location of many homes plagued in this manner happens to be on the coast or on tidal estuaries, and the suggestion is that a certain instability resulting from tidal movements and from rainfall causes sudden motions and knocks in parts of the buildings. These natural initial stages are then followed by others having a psychological explanation; someone becomes suspect, other members of the household regard him with curiosity or endow him with the ability to do unnatural things, and sometimes the person credited with miraculous power proceeds to demonstrate it with cunning or malice.

On the last day of the conference Drs. J. B. and L. Rhine gave an interesting summary of recent work on spontaneous cases at the Parapsychology Laboratory of Duke University, thus fittingly concluding a meeting of minds which all participants regarded as memorable and enjoyable. None carried away the feeling that this conference was a session of amateurs or deluded persons, though he may have brought it. The occasion was clearly a manifestation of a genuine struggle with the best means available to make sense out of a welter of persistent reports, a mass of folklore clamoring for attention and possibly pointing to new scientific developments.

—Henry Margenau

BEGINNING in October, the Foundation for Integrated Education will co-conduct, for the fourth consecutive year, an adult education course at the Staten Island Institute of Arts and Sciences.

Courses in adult education are ordinarily based on the free discussion of lecture materials that prove all too often to be indeterminate. The Staff of the Foundation has found, from experience, that basic principles in knowledge can be demonstrated so clearly that they may be possessed in essential form and force, by the layman. No technical knowledge is called for; only sufficient interest in man, in life, and in the universe to want to know how we find out

what it may all be about. In the demonstration-lecture, oral exposition of a single significant principle is fortified by experiments, by motion pictures and other visual resources in physics and biology, and by direct experiments, in which the audience participates, in psychology. By these means is ensured a discussion of an experience then and there shared, in contrast with an oral exposition, with all the elastic and shaded meanings in the words.

The course is a cooperative enterprise, in which the Staten Island Institute of Arts and Sciences and Wagner College are full participants. The New York Public Library and the New York City Radio Station (WNYC) are also collaborating in what thus becomes essentially a community project.

As we go to press, the precise wording of the announcement is under discussion. The following is, however, an accurate description of the undertaking.

Under the general title, "The Present Question," the six lectures follow one another in a sequence which is almost as important as the several principles themselves. The first lecture, "Man: Citizen of the Cosmos," by Harlow Shapley, Prof. of Astronomy, Harvard University, will shift perspectives from life as a local accident on this planet to life as potentially and actively a cosmic phenomenon. The second, "The Physicist's Idea of Order in the Universe," by Robert B. Lindsay, Dean of the Graduate School, Brown University, will demonstrate that the very substance of this universe is orderly, and indeed musical, by reason of its energetic, basic character. The third, "All Force is from Non-Material Fields," by Adolph J. Stern, Dean, and Chairman of the Department of

Chemistry, Wagner College, will show that the non-material is a force, and may indeed be *the* force, which orders and moves matter, in the form of fields. The fourth, "Life, A Symphony of Order," by Ruth Lofgren, Department of Biology, Brooklyn College, will deal with the exquisite order which emerges from the stuff of which every plant and animal, from virus to whale, is made, an order which is not displayed by a rigid unchanging structure, but rather through a most unstable fluid substance, protoplasm. The fifth lecture, "Perception and Meaning," by Harvey W. Culp of the Foundation for Integrated Education, will then and there demonstrate the two kinds of perception, one that we share with animals, and one that is unique in man: conceptually meaningful perception. The sixth and final lecture, "Science and the Cultural Potential in Man," by F. L. Kunz of the Foundation for Integrated Education, will run the basic argument out from science into the other chief cultural moods, such as art and religion, to suggest how insight in those domains, both Western and Eastern, anticipated and used the methods of exact science (of course without the logical rigor of science) to formulate spiritual and aesthetic ideas that are now being employed with authority by modern science.

The Social Philosophy Division of Cooper Union, New York, will offer three public lectures on the Integration of Science and Art by F. L. Kunz, on Tuesdays, 7:30 to 9:30 p.m., November 15, 22 and 29.

The cover drawing represents a cloaked rider on horseback.

REVIEWS

Our Cultural Heritage

A SECOND edition of *A Cultural History of Western Education* by R. Freeman Butts, Professor of Education, Teachers College, Columbia University (McGraw-Hill, N. Y., 1955, 645 pp., references, index, \$6.50) has just been published. This constitutes a careful revision and improvement upon the excellent first edition, published in 1947.

We have long and persistently urged that our teachers might well do better with less pedagogy and more general perspective of the cultural heritage in their

preparatory programs. However, we have been resigned to the fact that it is administratively unthinkable that they should go without a course entitled "The History of Education." This volume is recommended for such courses, for it sets the history of education in the matrix of cultural history and is thus so enriched as to make fatuous many "History of Education" courses (from Froebel and Pestalozzi to Dewey) of which we have knowledge. From the point of view of evaluating the teacher's role in society, which is usually a problem for the teacher, for the administrator, and for the Board of Education and the P.T.A. president, the values derivative from seeing education (and, therefore, the teacher) in a cultural setting are great.

The material is well-written and presented chronologically. Each period is analyzed on four broad bases: (1) A survey of the political, economic, social, and religious institutions of the period, (2) An examination of the manner in which educational institutions were organized, controlled, and supported, (3) An analysis of the climates of thought, beliefs, and values that had significant influence upon the aims, content, and methods of our educational systems, (4) A study of the educational program on the elementary, secondary, and higher educational levels. Those who are particularly concerned with educational administration can stress the first and second sections of each period or chapter as they read. Those whose concerns are chiefly with curriculum, teaching, philosophy, or psychology may concentrate on the third and fourth sections of each period.

To most of us, scholasticism, nominalism, realism, St. Anselm, St. Augustine, Albertus Magnus, St. Thomas Aquinas, and others seem to be personages and ideas of remote history, having very little to do with some of the basic arguments and concerns about education appearing currently in our magazines. Yet, as Dr. Butts clearly shows, by exerting influence upon the cultural climate and the institutions of the Middle Ages, they have set basic patterns in Western education which cannot lightly be ignored. Disputants as to the pros and cons of the value of the liberal arts would do well to recognize that "Before the end of the Roman Imperial period the number and framework of the seven liberal arts had been stated by Capella. . . . However, in the sixth century, Cassiodorus found sufficient scriptural sanction for the seven liberal arts to fix them securely as the necessary preparation for the study of theology throughout the Middle Ages. . . ."

In our present discussions about curricula, *The Great Books*, general and integrated education, etc., we would all be better off were we sensitive to the force of the prescribed curriculum which has been upon us for more than 700 years. "With the rise of the university system, an expansion of the liberal arts curriculum followed. To the seven liberal arts were gradually added the newly discovered works of Aristotle on the physical sciences ("natural philosophy"), ethics and politics ("moral philosophy") and metaphysics ("mental philosophy") . . . As Aristotle gradually became "respectable" and as his works were reconciled with church doctrine . . . the philosophical and scientific studies of Aristotle came to be prescribed along with the traditional seven liberal arts in the arts curriculum . . . The first complete prescribed curriculum in arts seems to have been laid down at the University of Paris in 1215." It was at this very same time, too, that the requirements for the B.A. and M.A. degrees were first established and it is basically with this long tradition that we must come to grips if we are to serve the educational needs of our times intelligently. Oxford and Cambridge followed this earlier pattern, and in setting up our American colleges and universities these same traditions were followed. In this connection, Dr. Butts remarks, "It might be noted that we are peculiarly the inheritors of the medieval tendency to organize and institutionalize. For example, the grouping of studies into separate faculties, the requiring of students to confine themselves largely to one faculty, the allotment of a definite period of years to a student's course, the giving of examinations, and the granting of

degrees or titles with formality and ceremony are all distinctly medieval in origin. The most important educational characteristic of the medieval university institution, however, was its tendency to mark out a definite course of study or curriculum, and to prescribe certain books to be read by the students." Does this have a familiar ring? Does this set off some of our problems and discussions in a cultural and historical setting which is significant?

It is in Chapters 14 through 17 that this reviewer found organized enough material to keep him busy for a long time to come. Here are marshalled the social, economic, and cultural forces of the nineteenth and twentieth centuries. Here we have laid before us the immediate past of our recent educational successes and failures. Here are analyzed the sources of our present educational hopes and fears.

In the heat of battle or under the exigencies of adjusting to immediate needs, most of us are inclined to forget that important (both fortunate and unfortunate) battles were fought in American education during the past 150 years. We are all-too-unmindful of the recency of the defeat of classical education which was based upon faculty psychology, "The Genteel Tradition," and the goal of "mental discipline." We have all been so busy keeping up with the rush of events and the expansion of knowledge that we are generally lacking in anything like a true perspective of the vast changes that have occurred even within our own times. All of us have been caught in the ambiguity of being unconscious traditionalists on the one hand and experimentalists on the other. We have been pressured, have surrendered to expediency and to the fads of the moment. We have confused "training" with "education" and have attempted to serve many masters. It is, therefore, small wonder that educational discussions tend to become mangles of semantic confusion. It is remarkable, really, that we are doing as well as we are, when one comes to review with Dr. Butts the whirlwind through which American education has recently passed.

This reviewer is grateful to the author for calling to mind many forces and events which have been influential but which are generally overlooked. We humbly suggest that these chapters (yea, the entire book) be used to get one's bearings before any of us attempt to criticize or defend education, educators, and our schools.

—Harvey W. Culp

Education of the Emergent Individual

DR. L. Thomas Hopkins gives us the benefit of the wisdom and insight of a life-time of study of the learning process in *The Emerging Self*, published by Harper and Brothers, 1954, 366 pp., index, \$4.50.

Here is a clear analysis of education in the broadest sense that agrees with what we know about the human being as a biological organism. Perhaps the most obvious thing about a living organism is the potential for growth and development. The growth process is inherent in a living thing and is not imposed on it from the external environment. The more ideal the environment, the more perfectly can the organism develop to its full potential.

"Parents, teachers, students, and laymen are always

impressed with the fact that subject teaching based upon external control by adults is the reverse of the normal biological process based upon need-experiences of the learner. They want to know if, today, there are teachers who approach education through the eyes of the learner. There are some." As the author reminds us, it makes all the difference how and in what spirit the observer offers his experience.

The basic principles dealt with in the book are: (1) The essence of all life is change. (2) The continuity of all life is process. (3) All life has direction. (4) All growing, behaving, learning are differentiated aspects of or are creative emergents from the same biological life process. (5) Self-enhancement or self-maturity or self-fulfillment has no fixed upper limit. (6) Maturity is developed or hindered by all life activities in or out of the school or the home. (7) Every individual constantly strives for the good life or the better life as he sees it. (8) To move progressively toward a better life each person must continuously improve the quality of the meanings which constitute himself. (9) The school program must be built around basic conditions which foster self-maturity. (10) The professional competence of teachers lies in their understanding and use of the unitary biological growth process. (11) The perception of a situation by the behavior is more important in determining his behavior than the perception of an observer. (12) The normal biological unit of growing, behaving, learning is a child facing and acting in his own need-situation with his own perceptions by his own process.

Dr. Hopkins discusses simply and sympathetically the ways in which the biological growth process may be used by the parent and teacher. The examples he gives present a most convincing case for a new orientation toward learning. This point of view is substantiated by results from the field of psychotherapy, etc.

The following passages will give you something of the style and depth of this book. "Every theory of learning is based upon a theory of human relations, explicit or implied. Since there is a relationship among individuals during learning activities, an underlying theory of human relations is inescapable. The first question to ask about any theory of learning is, 'What concept of human relations operates in the face-to-face relations among the individuals?'"

"I have already pointed out that the two major theories of interpersonal relations are the authoritarian or reactive and the cooperative or interactive. The corresponding theories of learning are the *association* theories for the authoritarian and the *field* theories for the cooperative human relations. Educators and laymen are generally unfamiliar with these terms, but they do know the theories by other names and can identify some of the individual types. The association group are called stimulus-response theories, such as behaviorism, connectionism, conditioned response, or trial-and-error learning. The field group are called *gestalt* or organismic theories, which include purposeful, depth, self, or personality psychology, psychiatry, and psychotherapy. . . . Most homes and schools are authoritarian, and promote association theories of learning. Only a few schools operate on field theories of learning."

The author goes on to say that association theories reverse the normal biological growth process. "They assume that control of growth and learning is outside the

individual and in his phenomenal environment, whereas the biological evidence indicates that control of growth and learning is inside the individual."

Dr. Hopkins discusses where the control is in the cooperative field, the basic differences between values acquired from "outside" and those built by the individual, and many more ideas of similar importance.

The Emerging Self is a valuable contribution to our understanding of learning. Professional educators, parents, and others concerned with the development and maturing of human beings will find here refreshing and challenging insights into the potentiality of man and ways in which the creativity within each of us may most effectively be released.

—Ruth Lofgren

Man's Purposive Experience

WITH presses pouring out vast streams of new titles, it may seem strange for us to review here a book that, in terms of publisher's date, is not new. However, partly to make amends for not having noticed it sooner and particularly to call the attention of our readers to a significant volume, we herewith note *The "Why" of Man's Experience*, by Hadley Cantril (The Macmillan Company, N. Y., 1950, 198 pp., Reference Appendix, Index, \$3.25).

Everyone interested in psychology can profit by Dr. Cantril's first chapter which begins with an excellent analysis of the purpose and methods of scientific inquiry and applies this to a brief review of the science of psychology. With fairness, each of the many "schools" or approaches to the "science of man" is appraised, but the author concludes that it "... indicates that no explanatory scheme so far offered gives an adequate account of the characteristics of man's experience. Such an account will be possible only if psychology views man's behavior as a process of participation in which each variable involved is cross-related and dependent upon other variables." This sets the tone for the balance of the book, for the author believes that "... Man's thought and behavior can be understood only as *processes* which take place in full-bodied situations."

The author believes also that "The outstanding characteristic of man is his capacity to sense value attributes in his experience and to seek an enhancement of these value attributes through participation in new situations. The standard of value attributes each person uses is influenced by his own unique biological and life history." Recognizing that this is "touchy" ground, Cantril assures us that "... while such concepts may appear to be metaphysical today, research in the biological and physical sciences indicates that such concepts do hold the possibility of eventual scientific understanding." This capacity to sense value attributes in experience is shown, in an excellent chapter, to have evolved along with and dependently upon "... an interlocking network of man's other capacities: his ability to create and use artifacts, to create and use abstractions, to manipulate ideas intellectually, and to make value judgments in order to act successfully to carry out his purposes."

Illustrating a chapter entitled "The Transactions of Living" with the "distorted room" experiments in perception, the author here states that "a characteristic

of the behavior of any living organism is that there seems to be some purpose behind it. . . . The final picture concerning man's purposive activity is one which shows it as a process, and in which no rigid classifications should be made according to the types of mechanisms involved." Here, too, we are told ". . . Everyone is trying to do his best within the particular environment within which he must act. Any forced change made purely for reasons of expediency is likely to create frustration and have serious personal consequences if it is prolonged." Let teachers and curriculum builders give ear to this and also to the following sentences: "It is out of what Einstein has called the 'rabble of the senses' that man must create for himself some sort of world in which he can act effectively, a world which will take on a degree of order or system or meaning. For this is the only kind of world in which man can act effectively."

But, the author contends, "A person can participate in the process of living only through some kind of action . . ." which is based upon what he calls our "assumptive form world." This ". . . consists of the total set of assumptions which we build up on the basis of past experience in carrying out our purposes . . . [it is] the only world we know and it differs for each one of us."

Perhaps the most satisfying and stimulating chapters in this book for this reviewer were the last three, which discuss "The Nature of the 'Me,'" "Participation With Others," and "Man on his Own." We wish that every teacher and parent would read them. Not only are personality and character attributes traced in their development and incorporation into the assumptive world of each life, but the subtlest and most poignant human characteristics are sensitively and sanely treated. Here, too, Dr. Cantril astutely indicates that there is a real difference between *surety* and *security*. Although it may appear to some that this is a mere exercise in semantics, we feel that the subtle distinctions which exist between the two are truly important in this day and age when "security" tends to become a cliché in every phase of life from education and psychology to economics, politics, and social relations while, at the same time, we seem to tend dangerously toward a state in which none of us are really sure of the meaningfulness of most of our assumptions.

"Man on his Own" is the title of the final chapter and it is here that the thesis that "the outstanding characteristic of man is his capacity to sense value attributes in his experience" is fully developed into a discussion of personal standards, morals, ethics, etc. In this age of anxious busy-ness, of entertainment, of dependence upon material things, of conformity, and of search after "security," it is heartening and refreshing to read that "contentment, happiness, and the great feeling of personal success are most likely to be found as we participate in the apparent trivialities of life."

In conclusion, this reviewer is impelled to quote the author again, in the hope that educators, parents and teachers will take seriously these words: "The success of man's intelligence in extending his knowledge and creating his marvelous artifacts has itself apparently led him to overestimate the power of intellectual capacity alone and, by comparison, to pay too little attention both to the process and to the effectiveness of value judgments in areas where value judgments alone can

give us reliable guides to action. This is today's great illusion. . . . The process of value judgment that is the guide for our most effective action and that underlies our working conceptions of truth, beauty, or moral wisdom is scarcely dealt with by modern education as a capacity of man which might be improved by training. By and large it is only in extracurricular activity or in some added special program associated with the formal educational process that value judgments are involved. Only in such situations does the developing individual deal with issues that are personal and important to him, issues that are resolved by some value judgment on which he must act and which changes for better or worse his capacity to make value judgments in the future."

—Harvey W. Culp

A Critique of Criticism

THE 1955 spring issue of *Comparative Literature* is devoted to providing a "general view of the changes in the impulses and forms of literature during the past hundred years"; significant among its centennial summaries is "Criticism in Crisis" by Harry Levin. Although his subject is formidable, he moves upon it in no shy and shrinking manner: from Saint-Beuve to Saintsbury, from Petrarch to Proust, from Pater to Praz, from Taine to Toynbee, from the neo-platonism of early Christian Alexandria to the neo-pagan aestheticism of the Victorian *fin de siècle*, from realism and naturalism to symbolism, from the primordial image and the archetype to psychoanalysis and the *Partisan Review*, from Henry James to Hollywood, from the Renaissance to the New Critics, Mr. Levin whirls us along the dizzying path from point to point in the short space of scarcely more than ten pages. If we are never allowed to rest long enough to perceive what the "crisis" is, we are never quite free from the feeling of one. As we are conducted on this highly pressurized mental Grand Tour, we move through a text perpetually agitated by a vocabulary loaded with heavy, academic jargon and displaying a constant fondness for ponderous abstractions in artificial balance; e.g., writing for money and teaching for a living are contrasted as choosing between "journalistic commercialization and academic domestication," and people who have deserted serious writing for easy dollars are described as "disaffected from criticism," and among those who "have gathered the emoluments reserved for men of letters who confirm the unlettered in their *haine de la littérature*."

The article is unquestionably learned (tremendously so: the Hollywood spectacle-film or a Churchillian peroration could scarcely surpass it in the marshalling of The Ages). In the course of his historical summary Mr. Levin chides the brilliant reviewer Mr. V. S. Pritchett for betraying the "incompleteness of his own education." Mr. Levin has obviously been at no slight pains to forestall our taking any such slighting view of his.

Despite the formidable apparatus of professional jargon in which Mr. Levin conceals his thought, and despite glittering pageantry of names (introduced too often not as references, but as mounted "trophies" of the chase), there is such substance and remarkable range in the summary as to warrant this extended note

so that Mr. Levin's remarks will not be lost to view. If one will be a little patient, he may find something resembling "infinite riches in a little room."

These riches come to us in the form of insights or marginal remarks wedged in the heavier blocks of material—flowers peeping out from the crannied wall of doctoral prose. For example, Mr. Levin's comments on the true function of historical scholarship, not for display but for removing "the encrustations of time," for allowing us to see of the past the "conditions of their existence in . . . relation to ours." He affirms that "historical ignorance is a form of slavery" and comments that what is "historically unique in our epoch" is the creating of "an imaginary library, where the whole continuum of man's recorded expression can be connected and placed in perspective."

At this moment in history when writers are tempted to withdraw from the struggle with the real, the author reminds us that artists, scientists, writers, cannot, like flying fish, lift themselves above their own historical milieu, that any form of "art for art's sake" is futile: "To . . . assert that literature should be autotelic, having no aid beyond its own existence, is a jejune conception." His comments on the critic as "believer" (religious, political) are good and timely; he asks whether such a critic "seeking his particular version of truth . . . will . . . be just to anything that conflicts with his assumptions . . ." and adds that the mere private assumption of detachment and candor on the part of the critic is no warrant of its presence.

In a deeper mood, Mr. Levin concludes by touching upon Mr. Arnold Toynbee's studies "in the morphology

of civilizations" as establishing a "point of convergence where the structural is reconciled with the historical, and where form is seen to be shaped by growth." To illustrate on a minute scale, does this mean that the novel as "form," for example, grew up with science and middle-class expansion because it was, like them, more "realistic" than older literary forms, more in touch with the everyday world and therefore more suited to the new context of mind created by accumulating knowledge and middle-class business realism? That the slowly developed beak of a new attitude pecks away the restraining shell of a fixed form to emerge into a more free world?

The flower in the crannied wall that we call our favorite has to do with the thought: "Opaque phraseology can never be a substitute for clear thinking; and glossaries will not create a universe, where there is a chaos, of discourse. Modern rhetoric, if it is not to be a logomachy, must meet the challenge of the larger structures with more concreteness and discrimination." Precisely. Francis Bacon was concerned about this problem when he observed that the first distemper of learning was when men studied words and not things. But the Advancement of Learning is such that the graduate school mind now distinguishes itself, not by the clean-cut depth of its dive, but by the enormous verbal splash it makes on entering the waters. We have dwelt heavily on this topic. But this "opaque phraseology" is the curse of our learned "trade" journals. Of even more concern is that the unschooled often admire this as a special ornament of learning.

—Gerald Lahey

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